

Assessing Risk:

Hearing Impairment

Hearing screening and follow-up evaluation is recommended by the American Academy of Pediatrics and the Center for Disease Control, as follows:

Infants:

- Universal newborn screening by 1 month of age (all hospitals in Vermont and most other states now screen all newborns for hearing loss),
- Diagnostic confirmation of hearing loss by 3 months of age, and
- Implementation of comprehensive treatment and early intervention by 6 months of age

On-going pediatric hearing health care:

Children of all ages with the following risk factors for late-onset hearing loss should receive ongoing monitoring of hearing status:

- **Neo-natal history of :**
 - a) birthweight less than 1,500 grams (3.3 lbs) or gestation of less than 37 weeks
 - b) Apgar scores of 0–4 at one minute or 0–6 at five minutes
 - c) Hyperbilirubinemia at a serum level requiring exchange transfusion
 - d) treatment in a neonatal intensive care unit
 - e) TORCH–Toxoplasmosis, Other agents, Rubella, Cytomegalovirus (CMV), Herpes simplex
 - f) treatment with ototoxic medications including gentamycin and other aminoglycosides
- **Craniofacial anomalies, including cleft lip, cleft palate, malformation of the head, neck or external ear**
- **Stigmata or other findings associated with a syndrome known to include sensorineural and/ or conductive hearing loss**
- **Congenital hypothyroidism**
- **Syndromes associated with hearing loss including Down Syndrome, Usher's Syndrome, neurofibromatosis type 2 (von Recklinghausen's disease), and others**
- **Parent/caregiver concern regarding hearing or expressive and/ or receptive language**
- **Developmental language delay based on observation and/ or standardized developmental screening**
- **Head trauma associated with loss of consciousness or skull fracture**
- **Bacterial meningitis and other infections (mumps; encephalitis; viral labyrinthitis) associated with sensorineural hearing loss**

- Recurrent or persistent otitis media with effusion which lasted at least 3 months
- Exposure to potentially damaging noise levels
- Exposure to ototoxic medications, including but not limited to the aminoglycosides, used in multiple courses or in combination with loop diuretics
(Note: High doses of aspirin may cause contemporaneous hearing loss and tinnitus; the ototoxicity is fully reversible after exposure ends)
- Family history of late or delayed onset hearing loss
- Family history of permanent childhood sensorineural hearing loss

Office Based Screening Levels:

Office based screening should consist of pure tone audiometry conducted at 20 dB in favorable (quiet) conditions. Frequencies to be tested are 500 Hz, 1000 Hz, 2000 Hz and 4000 Hz bilaterally. Consider testing 3000 Hz and 6000 Hz if a history of noise exposure is reported/suspected. Testing 8000 Hz in an office-based program is optional however, reliability of results at 8000 Hz decrease with the younger (pre-school) population. If the child does not respond at 20dB at one or more frequencies in one or both ears, they do not pass and should be referred to an audiologist.

Below is an example of how screening results might be recorded in a patient's chart:

Date:	Audio Screen					Screener:
	500Hz	1000 Hz	2000Hz	3000Hz	4000Hz	6000Hz
Right	db	db	db	db	db	db
Left	db	db	db	db	db	db

Referral:

If you have a concern about a child's hearing contact the Vermont Department of Health Hearing Outreach Project at **1-800-537-0076** for testing and referral information.

Primary Source:

American Speech Language Hearing Association (ASHA). *Guidelines for Audiologic Screening*. Rockville, MD: ASHA: 1997.